

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-013537**Date Inspected:** 20-Apr-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1900**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Zhao Chen Sun**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower Components**Summary of Items Observed:**

On this date Caltrans Office of Structural Materials Quality Assurance Inspector, Sandeep Kumar (QA) was present during the times noted above for observations relative to the work being performed.

**Tower Trial Assembly**

The following Non Destructive Testing (NDT) inspection carried out as per the ZPMC submitted Notification No. 005554

**Visual Inspection Testing (VT)**

This QA inspector performed VT of the area previously tested and accepted by ZPMC Quality Control personnel. The member is identified as Tower Component. The identified component and weld designations reviewed are as follows:

NORTH TOWER LIFT-1 BEARING PLATE SKIN 'E'

NSD1 – SA76F/H – 40

**Magnetic Particle Testig (MT)**

This QA inspector performed MT of approximately 15% of the area previously tested and accepted by ZPMC Quality Control personnel. This QA Inspector generated an MT report for this date. The member is identified as Tower Component. The weld designation reviewed as follows:

NORTH TOWER LIFT-1 BEARING PLATE SKIN 'E'

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NSD1 – SA76F/H – 40

The following Non Destructive Testing (NDT) inspection carried out as per the ZPMC submitted Notification No. 005558

### Visual Inspection Testing (VT)

This QA inspector performed VT of the area previously tested and accepted by ZPMC Quality Control personnel. The member is identified as Tower Component. The identified component and weld designations reviewed are as follows:

EAST TOWER LIFT-1 CABLE TRAY SUPPORT SKIN 'C'

B22 – 1 – EL6.300M – 1~2 – 1, 2 – E

B22 – 1 – EL8.000M – 1 – 2 – E

B22 – 1 – EL8.000M – 2 – 1, 2 – E

B22 – 1 – EL10.000M~EL47.617M – 1~2 – 1, 2 – E

### Magnetic Particle Testig (MT)

This QA inspector performed MT of approximately 15% of the area previously tested and accepted by ZPMC Quality Control personnel. This QA Inspector generated an MT report for this date. The member is identified as Tower Component. The weld designation reviewed as follows:

EAST TOWER LIFT-1 CABLE TRAY SUPPORT SKIN 'C'

B22 – 1 – EL6.300M – 1~2 – 1, 2 – E

B22 – 1 – EL8.000M – 1 – 2 – E

B22 – 1 – EL8.000M – 2 – 1, 2 – E

B22 – 1 – EL10.000M~EL11.250M – 1~2 – 1, 2 – E

This QA Inspector observed the following work in progress:

### Flux Core Arc Welding (FCAW):

Weld joint # 046 located on East Tower Lift-1 Bearing stiffener ESD1 – SA227F/H. Welder is identified as 042218. ZPMC Quality Control (QC) Inspector is identified as Fu Wei Min. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2333 – Tc – P4 – F.

Weld joint # 043 located on South Tower Lift-1 Bearing stiffener SSD1 – SA16F/G. Welder is identified as 040533. ZPMC Quality Control (QC) Inspector is identified as Fu Wei Min. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2333 – Tc – P4 – F.

Weld joint # 038 located on East Tower Lift-1 Bearing stiffener ESD1 – SA227F/H. Welder is identified as 049220. ZPMC Quality Control (QC) Inspector is identified as Fu Wei Min. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2333 – Tc – P4 – F.

Weld joint # 049 located on South Tower Lift-1 Bearing stiffener SSD1 – SA16F/G. Welder is identified as 053869. ZPMC Quality Control (QC) Inspector is identified as Fu Wei Min. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2333 – Tc – P4 – F.

This QA Inspector observed the following work not in compliance:

During Magnetic Particle Testing (MT) review of welds on East Tower Lift-1skin 'C' Cable Tray Support, this

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Quality Assurance Inspector (QA) discovered the following issues:

- Two (2) transverse linear indication measuring approximately 5mm and 3mm in length.
- The member is identified as Cable Tray Support BK22-1-EL8.000M-1.
- The weld is identified as BK22-1-EL8.000M-1-1-E.
- The weld is a Tack weld (fillet) T-joint joining the cable tray support to the stiffener of skin'C'.
- The member is Non-Seismic Performance critical Member (SPCM).
- The member is located in Vertical Trial Assembly.

The Notice of Witness Inspection Number (NWIT) is 005558. The indication is located inside the area that has been previously tested and accepted by ZPMC Quality Control (QC) personnel. ZPMC's QC personnel are required to perform 100% MT inspection of this weld.

For further information, please see the attached photos and applicable reference below.

Applicable reference:

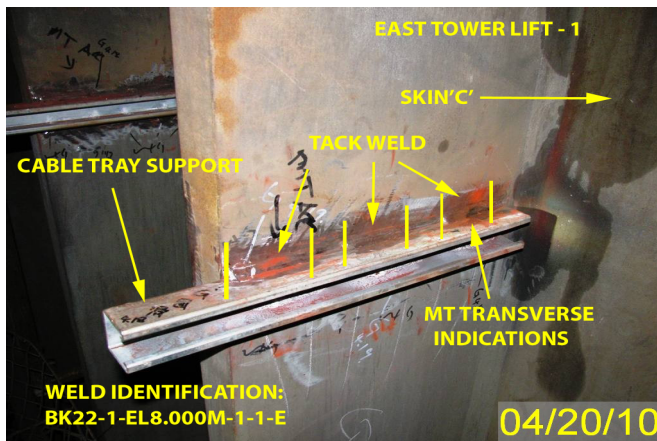
Special Provisions Section 8.3 – “Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents.”

AWS D1.5 (02) Section 6.26.2 – “Welds that are subject to MT in addition to visual inspection shall have no cracks.

This QA notified ZPMC QC identified as Mr.Ma Qian Bi and ABF inspector identified as Mr. Chen Wen liang of the above issue and that an incident report will be generated.

See attached photos:

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.



## Summary of Conversations:

No Relevant Conversations.

## Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Skyler Guest - 15000422360, who represents the Office of Structural Materials for

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your project.

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<b>Inspected By:</b>	Kumar,Sandeep	Quality Assurance Inspector
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<b>Reviewed By:</b>	Clifford,William	QA Reviewer
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